

BPT322 GST

WIRELESS ROOM THERMOSTAT WITH GSM MODULE

A sophisticated wireless thermostat which can be remotely controlled by means of SMS messages from your mobile phone. Wireless version enables easy and quick installation. It is not necessary to install labour-consuming lines between the thermostat and boiler that must come through floors. The transmitter includes two devices, temperature controller and GSM module, which cooperate, thus increasing the comfort of the heating system control. Simple control elements are used for setting; intuitive navigation in the selected language (CZ/PL/EN/DE/RU/SVK). Remote control is executed by means of brief SMSs which enable you, for example, to change the required temperature or turn off the system. The receiver is equipped with a code self-learning system and the E-EPROM memory which saves the code stored even in the event of voltage failure. BPT322 GST works with two-way communication at the frequency of 433.92 MHz. The assembly may reach the range of up to 35 m (in built-up area). This unique wireless thermostat with a big backlit display and intelligent PID-control offers a wide variety of usage in residential houses, offices as well as recreation areas.

receiver - wall mounted



- Receiver mains supply of 230 V/ 50 Hz
- Receiver with the CODE SELF-LEARNING system and E-EPROM memory (saving the code even at voltage failure)
- Two-wire connection to the boiler (potential-free contact)
- **Indicator LED signalling the states**
 - mains supply indication
 - transmission/ reception of signals
 - failure state
 - relay switched



TWO-WAY COMMUNICATION

- guarantees reliability of signal transmission and enables acquiring of return information

transmitter



- Enable to change the required temperature or change the mode by means from mobile phone
- Big, well-arranged and backlit display
- Intuitive navigation in the selected language (CZ/PL/EN/DE/RU/SVK)
- **9 weekly programs**
- 6 temperature changes per every day
- Programming by 10 minutes and 0.5 °C
- Programming by days or Mon-Fri, Sat-Sun and Mon-Sun
- Possibility of setting HYSTERESIS, PI regulation or PID regulation
- **Possibility of connectin an external temp. sensor**
- Preliminary heating start function
- Possibility of short-term temperature change
- **Even-odd week selection**
- **Current temperature correction**
- **Key lock**
- **Boiler operating hours total**
- Manual mode (MANU)
- Permanent shutdown (OFF)
- Holiday mode
- Summer mode
- Anti-freeze temperature (3°C)
- TEST function
- Automatic SUMMER/WINTER time change
- **Clock backup in case of power failure, approx. 7 days if rechargeable batteries are used (not included in the packing)**

- GSM module integrated
- modern design
- stand for stable setting at the optimum location

RECEIVER CONTROL ELEMENTS

Indicating LEDs:

GREEN LIT UP - electrical power connection on

BLUE SHORT BLINKING - sending or receiving a signal

RED BLINKING - empty E-EPROM memory

RED LIT UP - FAILURE Error mode (if no signal is received from the transmitter in 6 hours, will switch to a2 min. ON and 8 min. OFF sequence)

BLUE+RED BLINKING ALTERNATELY - code learning mode

BLUE+RED BLINKING CONCURRENTLY - code accepted

BLUE+RED LIT TOGETHER - memory erase mode

ORANGE LIT UP - relay is switched on

Front cover lift of:

Fig.1



Fig.2



Holes for installation on KU/KP68

FUNCTION BUTTON

- SHORT PRESS (for approx. 1 s)
CODE LEARNING mode
- LONG PRESS (for approx. 3s)
RESET (memory clearing)

output terminals
for boiler
(potential-free
switching
contact)

power supply
terminals

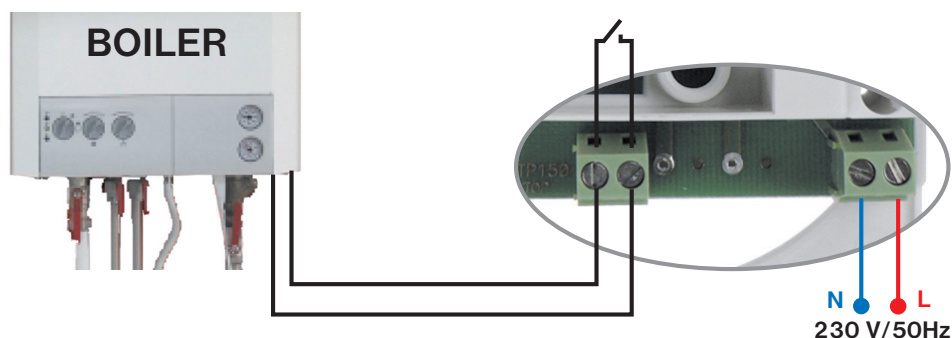
RECEIVER INSTALLATION

- lift off the front cover, see Figs 1,2
- attach the receiver to the wall (or to an installation box)
- turn off main switch
- connect the receiver acc. to the diagram (use terminals for room thermostat - 2 wires)
- connect the receiver to the 230 V/50 Hz power supply
- switch on the power. The green LED will light up and the receiver is ready for activation

Install the receiver (in internal rooms) as far from big metal objects as possible (at least 0.5 m) and far from power lines owing to interference of the signal received!

It is recommended that the device is installed by a person with adequate qualification in electrical engineering!

Wiring diagram:



CODE LEARNING

The BPT322 GST assembly is configured and ready to use – to put the receiver and transmitter in operation, just use the TEST function (see page 5)!

If the receiver memory has, however, been cleared – the red diode is flashing – proceed as follows:

- 1) Press the receiver's "FUNCTION BUTTON" for about 1.5 sec; the yellow and red LEDs start flashing alternately; and the receiver is awaiting the code ("learning mode").
- 2) Press twice the "MENU" button on the receiver (after connecting the power supply and activating, see page 3), choose the TEST mode by turning the "↖" button, and confirm it by pressing "⌂" button. The TEST RFM message is displayed, by turning "↖" button start the test.
The sign for wireless transmitting "📶" appears shortly on the transmitter and once communication is established the RFM sing will lit permanently.
- 3) The code receipt in the receiver is indicated by simultaneous flashing of the yellow and red LEDs; thus the code has been learnt. After the code receipt, the output relay is switched several times to verify correct function of BPT322 GST.

TRANSMITTER DESCRIPTION

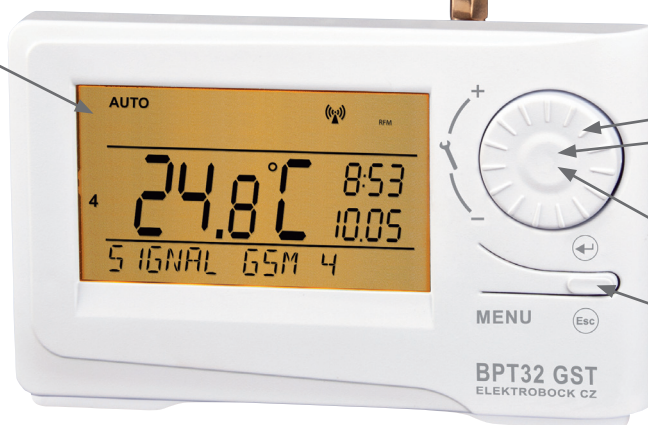
Backlit display

After you press any button, the display is backlit automatically for at least 5 s.

The GSM aerial is included in the packing (can be replaced by an external one with higher sensitivity).

GST type – external 9 dBm, SMA connector (not included in the packing); can be purchased separately, order No. 1330, on www.elblock.cz.

Controls



turning
short press

long press

press

= change of temperature setting
= selection (entry) confirmation
= quick change of required temperature or program (see page 10);
viewing other information (see page 10)
= step back (only in the CONST mode, see page 7)
= opening the main menu or returning a step back

RESET

press this button with MENU button for restoring to default settings (see page 8)

Connector for power supply No. 1
for the AD05-jack power supply (included in the packing)

SIM card holder

space for inserting the SIM card (the SIM card is not included in the packing)

Connector for external sensor
can be used with sensors CT04-10k (order No. 0012), CT01-10k (order No. 0015) or CT02-10k (order No. 0013)

Connector for power supply No. 2
for power source installed in a wiring box (not included in the packing)

Backup batteries room

to backup the time running, always use rechargeable batteries of the AA/R6 type (not included in the packing)

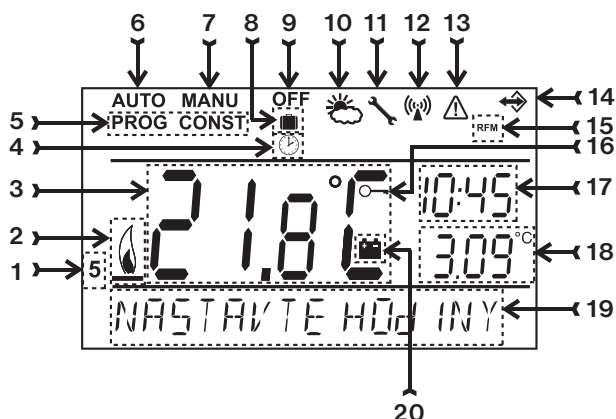
Type AD05-jack
5V / DC, 2.5 A

Open the SIM card holder and insert the SIM card in the direction indicated; then close the holder again.

Type CT04-10k
silicone conductor, length 3 m for measurements up to 99 °C, including connector

Use the type:
5V / DC, 2.5 A (SELV)
MIND THE POLARITY!!

LCD DESCRIPTION



- 1, Current day (in the Prog mode, selection of days to be programmed)
- 2, Heating on indication
- 3, Current room temperature
- 4, Clock setting mode
- 5, Modes for setting programs (PROG) and constants (CONST) (page 5)
- 6, Automatic mode (page 5)
- 7, Manual mode (page 5)
- 8, Holiday mode (page 5)
- 9, Permanent shut-off (page 5)
- 10, Summer mode (page 8)
- 11, Boiler inspection indication (page 10)
- 12, Signal transmission indication
- 13, Signal transmission ERROR
- 14, External sensor connection indication (see page 9)
- 15, Wireless mode indication
- 16, Key lock indication (page 10)
- 17, Current time
- 18, Current date/ required temperature
- 19, Status line, dynamically changing according to the process running
- 20, Low battery indication

TRANSMITTER INSTALLATION

The transmitter must be installed as far from interference sources (TV, PC, etc.) as possible; it must not be placed on a metal base. Pay attention to the thermal characteristics of the given place at installation.

- 1) Remove the control part from the bottom cover of the device (Fig. 1).
- 2) **Insert the activated SIM card into the SIM card holder at the back of the control part (see page 3).**
- 3) If you want to back up the time, install the fully charged rechargeable batteries (see Fig. 2).
- 4) Mount the control part onto the bottom cover.
- 5) Connect the power supply to the connector No. 1 or No. 2 (see page 3). **ATTENTION BPT322 GST MUST BE POWERED FROM ONE SOURCE!!**
- 6) The transmitter is freely portable and can be located, for instance, on the table. We recommend you to use the delivered table stand (installation acc. to Fig. 3)
- 7) If installed on the wall, no power lines must run around the thermostat!
- 8) Test the wireless communication between the transmitter and the receiver – page 5 (TEST).
- 9) Upon the first start (or reset), the thermostat shows the “**SET CLOCK**”, “**ENTER PIN**” messages; set the current time and date acc. to the instructions on page 5, enter the PIN acc. to page 9 and select language acc. page 7.

Fig.1

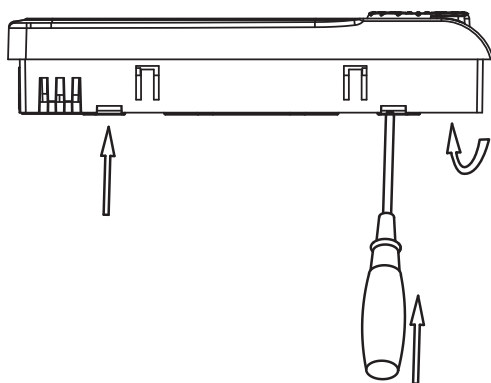


Fig.2

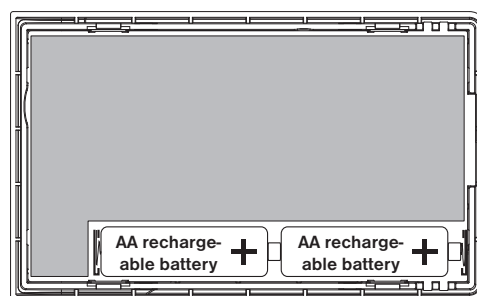
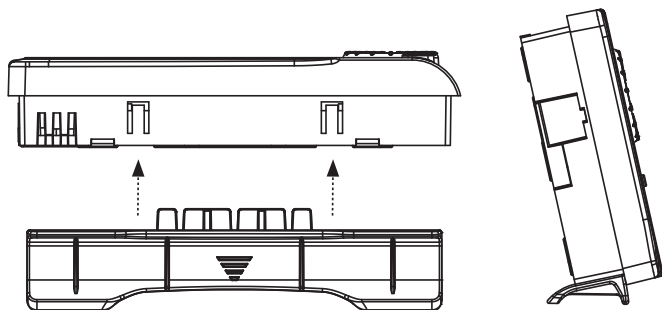


Fig.3

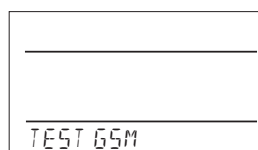


The thermostat enables backup of time in case of power failure. You must use rechargeable batteries 2x1.2 V, type AA/R6. After power failure, the time remains current (approximate service life: 2 years, according to the type of batteries used). The advantage is recharging of the batteries after the power supply is restored.

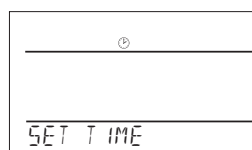
CAUTION: THE BATTERIES ARE NOT USED FOR SUPPLYING THE THERMOSTAT, FOR WHICH THE AD05-jack POWER SOURCE MUST BE USED (see page 3).

FIRST SWITCH-ON

After you switch on BPT322 GST first, the following message appears on the LCD; follow the instructions to make the corresponding settings (INSERT SIM CARD BEFORE POWER CONNECTION):



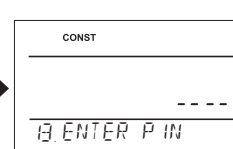
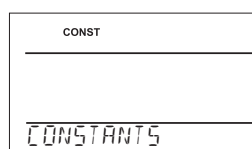
Press the “**MENU**”, button twice; choose the **CLOCK** mode by turning the “**↙**”, button and make the settings acc. to page 5.



GSM module is being checked.



Press the “**MENU**”, button twice; choose the **CONST** mode by turning the “**↙**”, button; move on to set **CONST13** acc. to page 9.



OPERATING MODES AND TRANSMITTER SETTING

Pressing any button first, you activate the display backlight. By another short press of the “**MENU**” button, you open the main menu in which you can choose operating modes.

AUTO (the Pr3 weekly program set by default, see page 6)

The thermostat works according to the weekly program settings (this program can be changed; for detailed description, see PROG, page 6).

Press twice the “**MENU**”, choose the AUTO mode by turning the “↖” and press the “⏵” button to confirm.



SMS form: **Auto**

Change of the mode to AUTO. Thermostat will be work acc. last setting weekly program.



MANU (default temperature setting of 21°C)

The thermostat works according to the temperature setting until the next manual change.

Press twice the “**MENU**”, choose the MANU mode by turning the “↖” and press the “⏵” button to confirm.



SMS form: **Manu**

Change of the mode to MANU. Thermostat will be keep last setting temperature.



OFF (the anti-freeze temperature of 3 °C is kept – cannot be changed)

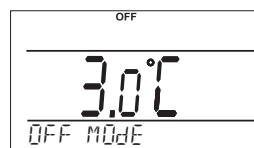
The thermostat is permanently switched off until the next manual change of the mode.

Press twice the “**MENU**”, choose the OFF mode by turning the “↖” and press the “⏵” button to confirm.




SMS form: **Off**

Change of the mode to OFF. You can cancel the mode by the SMS: **Temp xx** or **Auto** or **Manu**



HOLIDAY

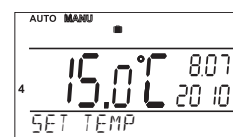
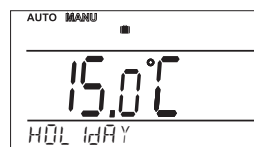
The thermostat maintains the preset temperature until the preset date and selected time. After expiry of the preset period, it automatically returns to the AUTO/ MANU mode last selected before the holiday.

Press twice the “**MENU**” button, choose the  mode by turning the “↖” and press the “⏵” button to confirm.

Step by step, set the temperature which the thermostat should keep during the holiday, date and time of your return from the holiday. Change the values by turning the “↖” button and confirm each change by pressing the “⏵” button.

After making the settings, press the “Esc” button to return to the basic screen.

Note: The holiday mode can be cancelled any time by selecting another AUTO or MANU mode.

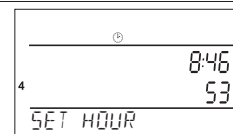
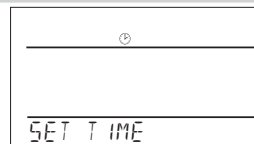


CLOCK SETTING

Setting the current time and date.

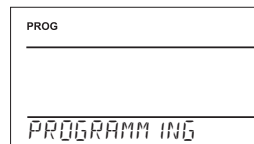
Press twice the “**MENU**” button, choose the CLOCK mode by turning the “↖” button, and press the “⏵” button to confirm.

Change the values by turning the “↖” button and confirm each change by pressing the “⏵” button (the parameter modified is always flashing); pressing the “Esc” button, you return to the menu).



PROG (PROGRAMMING)

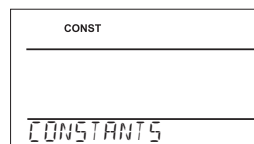
You can set 9 weekly programs with 6 temperature changes per day. The Pr1 and Pr2 programs are empty; Pr3 to Pr7 programs are set by default. The PrU and PrL are also set by default, intended for the EVEN/ODD week option (for details, see pages 6 and 8).



CONST (CONSTANTS)

Setting the control parameters. For a detailed description, see page 7.

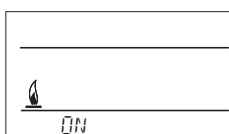
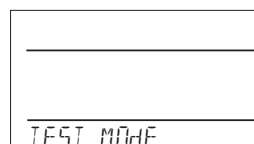
Press twice the “**MENU**” button, choose the CONST mode by turning the “↖” button, and press the “⏵” button to confirm.



TEST

Testing the correct connection to boiler.

Press twice the “**MENU**”, choose the TEST mode by turning the “↖” button, and press the “⏵” button to confirm (RELAY TEST is showed on LCD). Turn the “↖” button to start testing. The output relay will be switched on/off several times (the ON/OFF messages appear on the LCD).



PROG (PROGRAMMING)

You can set 9 weekly programs with 6 temperature changes per day. The Pr1 and Pr2 programs are empty; Pr3 to Pr7 programs are set by default. The PrU and PrL are also set by default, intended for the EVEN/ODD week option (for details, see page 6).

Change in the program settings:

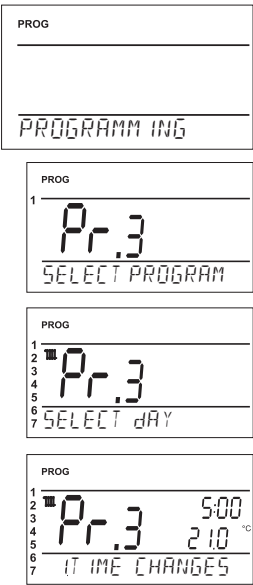
Press twice the “**MENU**” button, choose the PROG mode by turning the “↖” button, and press the “⏵” button to confirm.

The selected program number is flashing on the display. Turning the “↖” button, choose the program which you want to change and press the “⏵” button to confirm. Turning the “↖” button, choose the number of days to be programmed (you can program day-by-day or 1-5 = Mon-Fri, 6-7 = Sat-Sun, or 1-7 = Mon-Sun) and press the “⏵” button to confirm.

The **1st change time** starts flashing; set the time by turning the “↖” button and press the “⏵” button to confirm. Set the temperature for this time by turning the “↖” button and press again the “⏵” button to confirm. The **2nd change time** appears on the display. Proceed in the same way as with the first change setting. In this way, you can set up to **6 temperature changes per day**. To return one step back, shortly press the “⏮” button; to return to the main menu, press the “⏮” button long.

After changing the preset program, check whether all the changes made conform to your requirements!

It is not necessary to apply all six changes to one day!



Tables of temperature programs:

program No.1	1	2	3	4	5	6
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						
Saturday						
Sunday						

program No.2	1	2	3	4	5	6
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						
Saturday						
Sunday						

program No.3	1	2	3	4	5	6
Monday	05/21	06/18	12/20	16/21	18/22	21/18
Tuesday	05/21	06/18	12/20	16/21	18/22	21/18
Wednesday	05/21	06/18	12/20	16/21	18/22	21/18
Thursday	05/21	06/18	12/20	16/21	18/22	21/18
Friday	05/21	06/18	12/20	16/21	18/22	21/18
Saturday	07/21	21/18				
Sunday	07/21	21/18				

program No.4	1	2	3	4	5	6
Monday	06/21	07/18	15/21	18/22	22/18	
Tuesday	06/21	07/18	15/21	18/22	22/18	
Wednesday	06/21	07/18	15/21	18/22	22/18	
Thursday	06/21	07/18	15/21	18/22	22/18	
Friday	06/21	07/18	15/21	18/22	22/18	
Saturday	07/21	18/22	22/18			
Sunday	07/22	18/23	22/19			

program No.5	1	2	3	4	5	6
Monday	08/21	09/18	15/21	18/22	23/18	
Tuesday	08/21	09/18	15/21	18/22	23/18	
Wednesday	08/21	09/18	15/21	18/22	23/18	
Thursday	08/21	09/18	15/21	18/22	23/18	
Friday	08/21	09/18	15/21	18/22	23/18	
Saturday	08/21	18/22	22/18			
Sunday	08/21	18/22	22/18			

Note:
5/21 means
that the required
temperature at 5
o'clock is 21 °C

program No.6	1	2	3	4	5	6
Monday	07/21	09/18	15/22	18/23	22/18	
Tuesday	07/21	09/18	15/22	18/23	22/18	
Wednesday	07/21	09/18	15/22	18/23	22/18	
Thursday	07/21	09/18	15/22	18/23	22/18	
Friday	07/21	09/18	15/22	18/23	22/18	
Saturday	07/21	18/23	22/18			
Sunday	07/21	18/23	22/18			

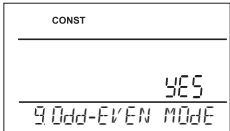
program No.7	1	2	3	4	5	6
Monday	07/22	09/18	15/23	18/24	22/18	
Tuesday	07/22	09/18	15/23	18/24	22/18	
Wednesday	07/22	09/18	15/23	18/24	22/18	
Thursday	07/22	09/18	15/23	18/24	22/18	
Friday	07/22	09/18	15/23	18/24	22/18	
Saturday	08/22	18/24	22/18			
Sunday	08/22	18/24	22/18			

All the
indicated
programs
can be
changed!

Even or odd week selection:

This setting is suitable, for example, for shift operation (the requirements on thermal comfort in the object change every week). The PrU and PrL programs will alternate automatically. The programs can also be modified according to your requirements.

Press twice the “**MENU**” button, choose the CONST mode by turning the “↖” button, and press the “⏵” button to confirm. Repeat pressing the “⏵” button until the constant No. 9 appears on the LCD. Set YES by turning the “↖” button, and press the “⏵” button to confirm.



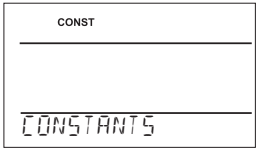
program U	1	2	3	4	5	6
Monday	06/20	08/18	14/21	17/22	22/17	
Tuesday	06/20	08/18	14/21	17/22	22/17	
Wednesday	06/20	08/18	14/21	17/22	22/17	
Thursday	06/20	08/18	14/21	17/22	22/17	
Friday	06/20	08/18	14/21	17/22	22/17	
Saturday	07/21	17/23	22/19			
Sunday	07/21	17/23	22/19			

program L	1	2	3	4	5	6
Monday	08/23	21/18				
Tuesday	08/23	21/18				
Wednesday	08/23	21/18				
Thursday	08/23	21/18				
Friday	08/23	21/18				
Saturday	08/23	21/18				
Sunday	08/23	21/18				

CONST (CONSTANTS)

Setting the control parameters.

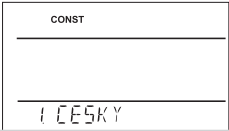
Press twice the “**MENU**” button, choose the CONST mode by turning the “↖” button, and press the “⏵” button to confirm.



1 ENGLISH (English language set by default)

Language selection (CZ/PL/EN/DE/RU/SVK).

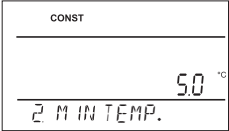
Choose the language by turning the “↖” button and press the “⏵” button to confirm.



2 MINIMUM CONTROL TEMPERATURE (5 °C set by default)

Setting the limit of the minimum temperature which can be set. If using the GSM module, you will be informed by an SMS that the room temperature has dropped below this value. Choose within the range **from 3 °C to 10 °C** (by 0.5 °C).

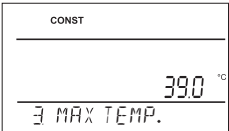
Set the value by turning the “↖” button and press the “⏵” button to confirm.



3 MAXIMUM CONTROL TEMPERATURE (39 °C set by default)

Setting the limit of the maximum temperature which can be set. If using the GSM module, you will be informed by an SMS that the room temperature has risen above this value. Choose within the range **from 15 °C to 39 °C** (by 0.5 °C).

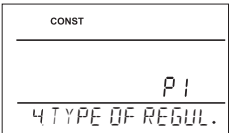
Set the value by turning the “↖” button and press the “⏵” button to confirm.



4 CONTROL TYPE (PID control set by default)

Selection of the control type:

Choose the type of control by turning the “↖” button and press the “⏵” button to confirm.



HS = Hysteresis

Difference between the desired and current temperature.

If the hysteresis is 1 °C and the desired temperature is 20 °C, the thermostat switches off at 20 °C, and on at 19 °C (see the graph). For correct hysteresis function, set the parameters according to the heating system type; see **CONST 5**.

Note: If hysteresis is selected, CONST 6 is skipped automatically.

PI = proportional-integral control

The PI-control principle consists in comparison of the current room temperature with the desired temperature.

The PI-control aims at achieving and maintaining the desired temperature without overshooting (see the graph). For correct function of the PI-control, set the control parameters according to the type of the heating system with respect to the room thermal inertia; see **CONST 6**.

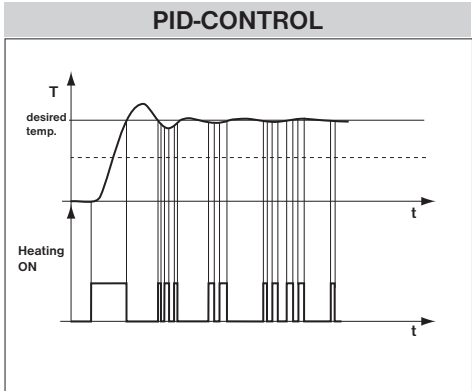
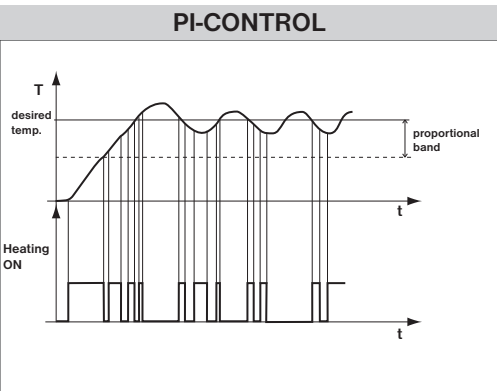
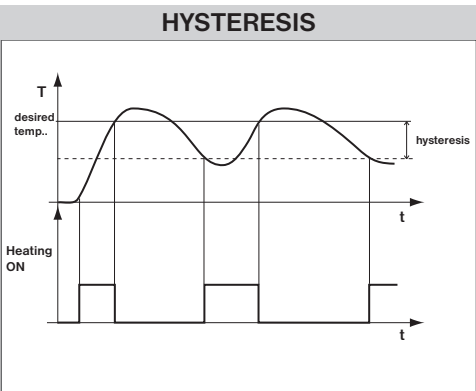
Note: If the PI-control is selected, CONST 5 is skipped automatically.

PID = proportional-integral-derivative control

The PID-control principle consists in continuous comparison of the current room temperature with the desired temperature, and automatic adaptation of the controller to the given conditions.

This is the most perfect continuous control; you can achieve not only short control time, but also high accuracy without permanent control deviation. The minimum switch-on time is internally set to 2 minutes, the proportional band is 2 °C, the time interval is automatically recalculated according to current temperature conditions.

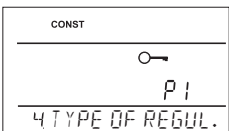
Note: If the PID-control is selected, CONST 5 and CONST 6 are skipped automatically.



Note: The graphs are just tentative; the real control course differs according to current conditions in the measured object!

CAUTION! ONLY IN CASE OF LOCKING BY PASSWORD (see CONST19)

If the “🔑” key symbol appears on the LCD, the constant selected cannot be modified and you must know the PASSWORD (see CONST 19, page 8). You can change the constant after entering the password. After you exit the CONST mode, the security lock of the constants related to the control will be activated automatically.



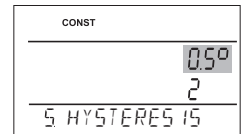
5 SETTING HYSTERESIS PARAMETERS

HYSTERESIS (factory setting of 0.5 °C)

Set **from 0.1 to 6 °C**. According to the value preset, the thermostat switches on at the temperature:

T switching = T required - HYSTERESIS

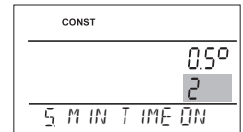
Set the hysteresis by turning the “\” button, and confirm with the “⊕” button.



MINIMUM SWITCH-ON TIME (factory setting of 2 min)

Here you can set the minimum switch-on time of the boiler in minutes at hysteresis. Select within the range **from 1 to 5 minutes** according to the type of the heating system used (see the table).

Set the value by turning the “\” button, and confirm with the “⊕” button.

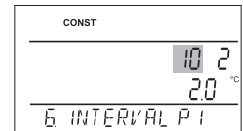


6 SETTING PI-CONTROL PARAMETERS

PI-CONTROL INTERVAL (factory setting of 10 min.)

Select according to the object's thermal inertia. The optimum setting usually falls within the range of 10 to 15 min. The adjustable range is **5 min to 20 min (by 1 min)**.

Set the interval by turning the “\” button, and confirm with the “⊕” button.

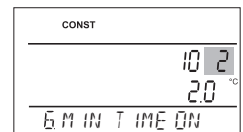


MINIMUM SWITCH-ON TIME (factory setting of 2 min.)

Select within the range **of 1 to 5 minutes**. The setting is given by the heating system type, and depends on the PI-control time period selection. Setting according to the table is recommended.

Set the value by turning the “\” button, and confirm with the “⊕” button.

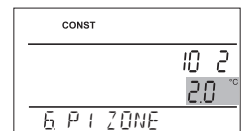
Heating type	Minimum source switch-on time
Electric heating	1
Plate radiators	2 (3)
Cast iron radiators	4
Floor heating	5



PI-CONTROL BAND (factory setting of 2 °C)

This value determines the temperature at which the PI-control starts functioning. For example, the desired temperature is 22 °C, the proportional band is 1.5 °C. Up to 20.5 °C, the source heats fully. When this value is reached, the PI-control starts. The PROPORTIONAL band can be set within the range **of 0.5 to 3.0 °C (by 0.1 °C)**.

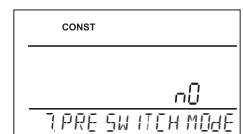
Set the PI band by turning the “\” button, and confirm with the “⊕” button.



7 PRELIMINARY SWITCH-ON OF HEATING (NO set by default)

This function guarantees you the required temperature at the required time. You need not consider when to switch the heating on in order to be warm when getting up in the morning without heating unnecessarily long in advance. You just program the time at which you want the desired temperature. Within two operating days, the program ascertains the thermal constants of the room and then it switches the heating on in advance sufficiently. The preliminary switch-on time is limited to 2 hours.

Set YES/NO by turning the “\” button and press the “⊕” button to confirm.

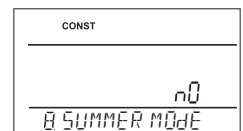


8 SUMMER MODE (NO set by default)

In this mode, you are not allowed to switch the heating on. It can particularly be used in the summer period, when you need not heat. After you enable this mode, the “☀” symbol appears on the display.

Note: The anti-freeze protection (3 °C) is still enabled. In this mode, you cannot change the temperature or set the holiday mode!

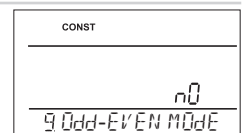
Set YES/NO by turning the “\” button and press the “⊕” button to confirm.



9 EVEN-ODD WEEK SELECTION (NO set by default)

If you choose “YES”, the PrU and PrL programs will alternate automatically according to the current week (even/odd). This setting is suitable, for example, for shift operation (the requirements on thermal comfort in the object change every week).

Set YES/NO by turning the “\” button and press the “⊕” button to confirm.



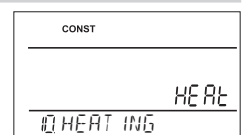
10 HEATING / COOLING SELECTION (HEAT set by default)

Setting the thermostat function.

HEATING = the output relay (for heating systems) switches if the current temperature drops below the desired value

COOLING = the output relay (for cooling systems) switches if the current temperature rises above the desired value

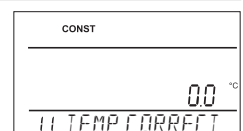
Set HEAT/COOL by turning the “\” button and press the “⊕” button to confirm.



11 TEMPERATURE CORRECTION (0 °C set by default)

This is used for correcting the temperature measured by the thermostat. The setting can only be done after 12 hours of operation, when the internal sensor temperature has settled. Measure the room temperature with a thermometer; if it is different from the temperature on the thermostat, set the correction within the range **of -5 °C do +5 °C**.

Set the correction by turning the “\” button and press the “⊕” button to confirm.



12 EXTERNAL SENSOR SELECTION (--- set by default)

If an external sensor is connected, the  symbol appears on the LCD (to approx. 2 minutes).

The external sensor can be used for:

1, control according to the room temperature - the sensor is located in the room (--- option)

2, control according to the floor temperature - the sensor is located in the floor (--- option)

--- If connected, the external sensor measures the temperature at the place of its installation (suitable, for example, for places at which the thermostat cannot be located, yet you want to control according to this room);

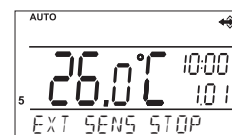
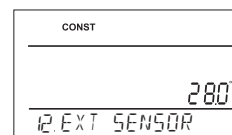
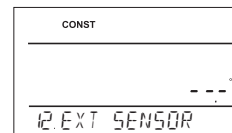
3, maximum floor temperature monitoring - the sensor is located in the floor (selection of 15 to 99.5°C)

15...99,5°C If connected, the external sensor monitors the floor temperature; the maximum temperature allowed for floor heating must be set (control according to the room temperature, with simultaneous floor temperature monitoring).

If the preset limit temperature is exceeded, the thermostat is switched off irrespective of the room temperature, and the "EXT SENS STOP" message appears on the LCD. The heating device is switched on again if the external sensor temperature drops by 0.5 °C.

If the external sensor is unconnected or faulty, the "EXT SENS ERROR" message appears on the LCD.

Set the external sensor option by turning the " " button and press the " " button to confirm.



tEL nO PHONE NUMBER SETTING

Allows the following options:

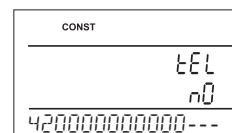
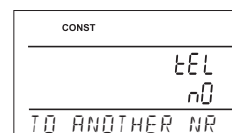
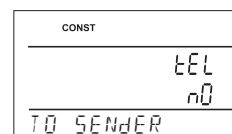
1) TO SENDER = SMS will be sent back to the telephone number from which the message was sent.

2) TO ANOTHER NR = SMS will be sent back to the telephone number entered in the thermostat.

3) BOTH NUMBERS = SMS will be sent back to both telephone numbers (combination options 1 and 2).

When choosing 2) and 3) option we enter a phone number in the international format (420123456789), to which return SMS messages on the thermostat condition should be sent. Is possible to enter a phone number min. 10-digit to 15-digit.

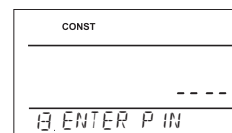
Turning the " " button, enter the phone number stepwise; confirm each setting with the " " button.



13 PIN CODE SETTING

Enter the PIN code of the SIM card inserted in the thermostat.



Turning the " " button, enter 4 digits stepwise; confirm each setting with the " " button.

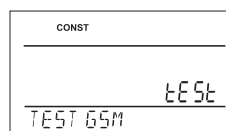
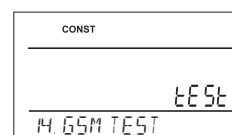


14 GSM TEST

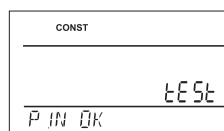
After setting the PIN code of the SIM card inserted in the thermostat is performed to test the GSM module and PIN validation.

Turning the " " button to start test of GSM module and checking of PIN code.

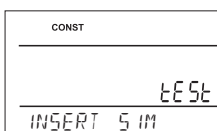
The " " button displays the next constant; pushing " " you return to the main menu.



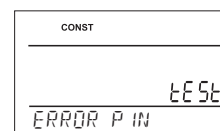
Checking the GSM module.



PIN entered correctly.






SIM card not inserted. Insert the SIM card, disconnect power to the 5 s, make adjustment and repeat test.

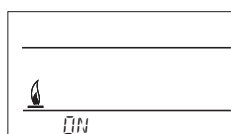
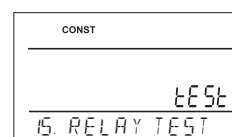


Wrong PIN. Reset BPT322 GST and enter PIN again.

15 RELAY TEST

Testing the correct connection the thermostat to boiler (this function is identical with the TEST mode in the main menu).

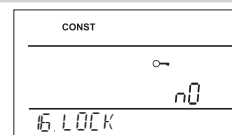
Start the test by turning the " " button. The output relay is switched on/off several times (the ON/OFF messages appear on the LCD). The " " button displays the next constant; pushing " " you return to the main menu.



16 KEY LOCK (NO set by default)

This is used for locking the controls as a protection against undesirable interference of a foreign person.

Set YES/NO by turning the “↖” button and press the “⏵” button to confirm.



17 KEY CODE

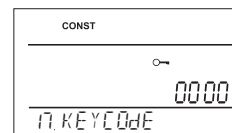
This constant can be set if CONST 16 = YES. It is used for setting the code by which you will be able to activate the controls. Set a four-digit combination (range from 0 to 9).

The keys will be locked within 1 minute (after opening the basic display). The “⏵” symbol appears on the LCD. If you press the “⏵” or “Esc” button, the LCD asks you to enter the key code; after entering the correct code, you are able to make any changes (the controls are functional again). The controls will automatically be locked again after you finish the setting (within approx. 1 min).

Gradually set 4 digits by turning the “↖” button; confirm each setting with the “⏵” button.

RECOMMENDATION:

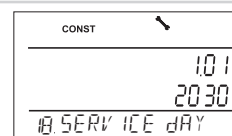
- Record the key code in the table
- You can cancel the code by setting CONST 16 to NO, or by restoring the default settings of the thermostat (see CONST 20).
- in case of loss of the code, it is necessary to bring the thermostat to factory settings using pressing buttons RESET (see page 1) and MENU (will erase all settings changes).



18 BOILER INSPECTION REMINDER (1.1.2032 set by default)

Set the date on which you want to be informed about the necessity of the prescribed boiler service. At the required time, the “MAINTENANCE NECESSARY” message and the “↖” symbol will appear on the bottom line of the LCD (you can cancel the message by setting a new date for the next boiler maintenance!).

Gradually set the day, month and year by turning the “↖” button, confirm each setting with the “⏵” button.



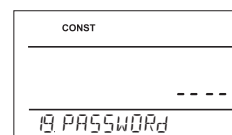
19 PASSWORD (not set by default)

It is used for locking the constants related to the given control settings. **Suitable for service technicians.**

After a numerical code has been entered, the user cannot change constants No. 4, 5, 6 and 10.

If you open the CONST mode and browse the constants, the “⏵” symbol appears next to the constants locked; if you turn the “↖” button, the password is required! Unless you enter the password, the constants remain locked. To try to unlock them again, you must exit the CONST mode and browse up the constant locked again.

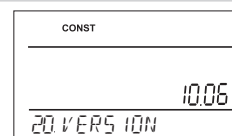
Turning the “↖” button, gradually enter four digits and confirm each setting with the “⏵” button.



20 VERSION (restoring the default settings)

Firmware version, informative parameter only.

If you press the “Esc” button long (for about 3 s), the RESET message appears shortly on the LCD and the thermostat returns to the default settings!



USER TIPS

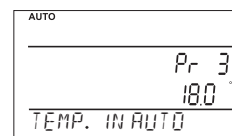
QUICK CHANGE OF REQUIRED TEMPERATURE / PROGRAM IN THE AUTO MODE

Press twice the “⏵”; the required temperature starts flashing on the display. Change the required temperature by turning the “↖” button and press the “⏵”. The change will last until the next program change.



SMS form: **Temp xx** (where xx are only integers within the range of CONST2 and CONST3)

Change of the desired temperature; the change will last until the next temperature change given by the program.



Press thrice “⏵”, the setting program starts flashing on the display. Change it by turning “↖” button and press the “⏵”.

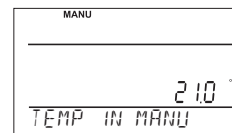
QUICK CHANGE OF REQUIRED TEMPERATURE IN THE MANU MODE

Press twice the “⏵”; the required temperature starts flashing on the display. Change the required temperature by turning the “↖” button and press the “⏵”. The change will last until the next manual temperature change.



SMS form: **Temp xx** (where xx are only integers within the range of CONST2 and CONST3)

Change of the desired temperature; the change will be permanent.

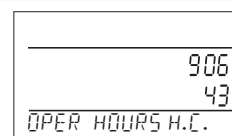


OPERATIONAL HOURS

Push the “⏵” button four times. The boiler operating hours appear on the LCD. The figure on the picture means 906 hours 43 minutes.

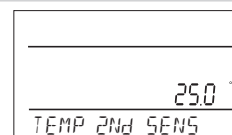
Resetting the counter:

When operational hours are displayed, turn the “↖” button anti-clockwise.



EXTERNAL SENSOR TEMPERATURE

Push the “⏵” button five times. The current temperature of the external sensor appears on the LCD; the value is only informative, and appears only if the external sensor is monitoring the maximum floor temperature (see CONST 12, page 9).



INFORMATION IN THE LCD DYNAMIC LINE

SIGNAL GSM x	Determines the signal strength at the place where the thermostat is located; where x is a value within the range from 0 to 5: 0..undeterminable or no signal detected 1..worst level 5..best level of signal
REQUIR TEMP	Information on the desired temperature preset
PROGR 3 PERIOD 2	Information on the program preset (e.g., 3) and the time interval running (interval 2)
SMS RECEIVED	Information the thermostat received new SMS
HOLIDAY IN 22.7	Only displayed in the holiday mode; informs on the end of holiday when the thermostat restores the last selected AUTO/MANU mode.
T EXT SENS 25.0	Current temperature of the external sensor, displayed only if the sensor is connected
EXT SENS STOP	If the preset limit temperature of the external sensor in the maximum floor temperature monitoring function is exceeded (see page 7), the thermostat is switched off

FORMS OF MESSAGES SENT



Info	Information on the heating system status
Auto	Setting AUTO mode, thermostat will be work acc. last setting weekly program
Manu	Setting MANU mode, thermostat will be keep last setting temperature
Off	Heating system switched off permanently. ; to cancel the function, use the <i>Temp xx</i> message, thermostat will automatically enter into the MANU mode with the given temperature or SMS message <i>Auto</i> (for AUTO mode) or <i>Manu</i> (for MANU)
Temp xx	Required temperature change (only integer numbers can be entered, they must fall within the permitted range of maximum and minimum temperatures –CONST2 and CONST3).
Call	Back call

xx = temperature value in °C (always a two-digit number, e.g. 05)

Any type of mobile phone can be used for sending and receiving back messages!

If you can set the font size (format) in your phone, always use the MEDIUM size when writing messages (if there are three options), or the BIG size (if there are two options).

FORMS OF BACK MESSAGES FROM THE THERMOSTAT



Requir: xx.x	Temperature required (user set)
Act: xx.x	Current room temperature
Set on	Heating system On
Set off	Heating system Off
AUTO	Thermostat in automatic AUTO mode
MANU	Thermostat in manual MANU mode
OFF	Thermostat in the OFF mode (permanently off)
Sig: x	Signal strength at the place where the module is located; where x is the value within the range of 0 to 5: 0..undeterminable or no signal detected 1..the worst strength 5..the best signal strength
Sens 2: xx.x	Current temperature of the external sensor
Battery!	Low batteries in the thermostat
Noaccept!	Error indicated (wrong SMS format, etc.)

xx.x = temperature value in °C

BACK MESSAGES ARE SENT WITHIN 3 MINUTES!

Note: If the minimum / maximum room temperature (preset CONST 2 and 3) is exceeded, the “WARNING” SMS is automatically sent in a form similar to that in the „Info“ form.

Info: If using a credit card, you must make a paid call once in 3 months. This call is executed automatically (in 80 days, between 4 and 9 PM) to the phone number entered in the thermostat (CONST tEL nO); after 20 s, the call is terminated automatically. You can execute this function earlier by means of the “Call” SMS message.

PRACTICAL EXAMPLES OF USING

USING AND SETTING OF BPT322 GST:

The thermostat is located in a room where anti-freeze temperature must be maintained (e.g. 7°C).

1. Connect the BPT322 GST strictly according to the instructions.
2. Choose the MANU mode.
3. Press the "⬅" button and set the temperature of 7 °C by turning the "↘" button.
4. Before arriving at the object, write an SMS in your mobile with the wording: Temp 23; then send the SMS to the number of the SIM card inserted in your thermostat. After receiving the message, the thermostat automatically switches on the heating system until the desired temperature is reached. Then BPT322 GST automatically sends the "BACK SMS message" informing you about the temperature change made. After arriving at the object, you can change the temperature according to your needs on the thermostat directly.

VOLTAGE FAILURE:

By short voltage failure on receiver comes to connection establishment with transmitter within one hour. It is necessary to set only time (all other settings remain saved in memory), if there are not rechargeable batteries in the transmitter.

RED LED LIT ON RECEIVER (FAILURE):

The thermostat is in failure mode (2 minutes ON and 8 minutes OFF).

- 1) Check the transmitter (power supply control).
- 2) Test the thermostat for correct connection by using TEST mode see page 5.

If the connection between transmitter and receiver is not established, please contact the service department under www.elbock.cz.

THE THERMOSTAT DOES NOT RESPOND TO SMS COMMANDS:

- 1) Check the transmitter (power supply control).
- 2) Check if the SIM card is activated.

If the connection between transmitter and receiver is not established, please contact the service department under www.elbock.cz.

TECHNICAL PARAMETERS

Receiver	
Power supply	230 V/ 50 Hz
Communication type	two-way
Frequency	433.92 MHz
Range	300 m (free area) 35 m (built-up area)
Sensitivity	< -102 dBm
Output	relay, max. 8 A
Protection	IP20
Working temp.	0°C TO +40°C

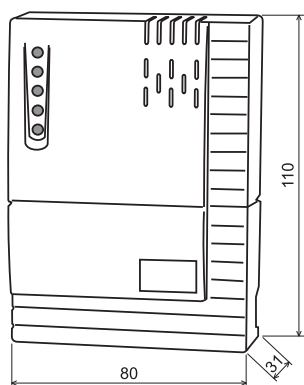
Transmitter	
Power supply	5 V/ DC, 2.5 A, typ AD05 - Jack
GSM module	SIM 900
Aerial	direct 1dB
HF power	< 10 mW
Frequency	433.92 MHz
Hysteresis	0.1 to 6°C
Adjustable temp. range	+5°C to 39°C
Temperature setting	po 0.5°C
Measurement accuracy	± 0,5°C
Protection	IP20
Working temperature	0°C to +40°C

External sensor:

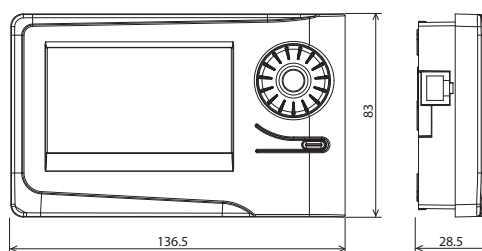
not included in the packing, type CT04-10k, CYXY 2 x 0.5 mm, 10 kΩ, lenght 3 m, plastic case PVC (CT01-10k and CT02-10k sensors can also be used)



Dimensions - receiver:



Dimensions - transmitter:



Power source:

included in the packing
type AD05-Jack,
5V/ DC, 2.5 A



In case of guarantee or post-guarantee service, send the thermostat including proof of purchase to the manufacturer's address. The guarantee does not cover faults resulting from incompetent installation or interference in the device design.

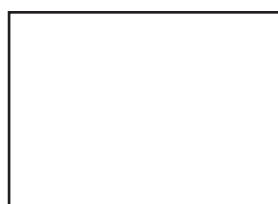
DECLARATION OF CONFORMITY

We, ELEKTROBOCK CZ s.r.o., herewith declare that the product BPT322 GST conforms to the basic requirements and other corresponding provisions of the Directive 1999/5/EC.

Issued: 01.04.2012

on www.elbock.cz

CERTIFICATE OF GUARANTEE	
(guarantee period for the product amounts to 2 years)	
product No.:	date of sale:
examined by:	stamp of shop:



LEAD FREE
in compliance with RoHS



PAP



ELEKTROBOCK CZ s.r.o.

Blanenská 1763

Kuřim 664 34

Tel.: +420 541 230 216

www.elbock.cz